

General Factors of Affective Temperament and Their Relation to Job Satisfaction over Time

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This study investigated the extent to which employee satisfaction is related to two broad emotional traits, Positive Affect (PA) and Negative Affect (NA). Eighty-two employees at Southern Methodist University completed trait NA and PA scales as part of their participation in a comprehensive health and fitness project. From 9 to 39 months later (mean interval = 27 months), subjects were retested on these temperament scales and also completed job change and satisfaction measures. Trait PA and NA were not only significantly correlated with several aspects of concurrent employee satisfaction, but also predicted some facets of job satisfaction that were assessed an average of over 2 years later. Finally, hierarchical multiple regression analyses indicated that emotional temperament, major job changes, and occupational quality variables each made independent contributions to the prediction of job satisfaction. These data, together with those from previous studies, demonstrate that job satisfaction can be usefully viewed in the context of the more general emotional lives of employees. © 1993 Academic Press, Inc.

Most of the early research on job satisfaction emphasized the importance of situational factors, such as the nature of the job itself or aspects of the work environment (either as they are objectively constituted or as they are subjectively perceived by the employee; see Locke, 1976; Staw & Ross, 1985). For example, several studies have shown that job satisfaction is positively correlated with the perceived opportunity to use valued skills and abilities (Hackman & Lawler, 1971; Herzberg, Mausner, & Snyderman, 1959; Lawler & Hall, 1970). Other significant correlates of satisfaction include pay level (either in absolute terms or as a function of perceived fairness), opportunities for promotion, frequency of recognition and praise by supervisors, and working conditions such as temperature, lighting, and noise (e.g., Lawler, 1971; Locke, 1973; Pritchard, Dunnette, & Jorgenson, 1972; see Locke, 1976, for a review).

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Recently, however, many researchers have begun exploring job satisfaction as a function of stable personality characteristics of the employee. The guiding idea underlying this dispositional view is that there are strong individual differences in job satisfaction; hence, some employees are likely to report consistently higher levels of satisfaction than others, irrespective of their work environments.

The current research further examines the dispositional basis of job satisfaction. It is important to emphasize, however, that a dispositional approach is not inconsistent with the environmental research described earlier. A dispositional view essentially posits that individuals retain a relatively consistent *rank order* across diverse work situations—that is, that some employees will tend to be more satisfied than others in any environment. These consistent individual differences may, of course, be superimposed on overall *level* differences that reflect the fact that some work environments are generally more satisfying than others (see Davis-Blake & Pfeffer, 1989; Gerhart, 1987). Moreover, most dispositional theories are inherently interactional, emphasizing that behavioral outcomes are a function of the fit between relatively stable aspects of the individual (needs, abilities, interests, values, etc.) and his or her current environment (e.g., Tellegen, 1988).

The Dispositional Basis of Job Satisfaction

Dispositional research on job attitudes actually consists of two separate but related lines of research. One type has explored the idea that job satisfaction is itself a personality trait, or at least shows trait-like qualities. As noted by Gerhart (1987), however, one limitation of this type of research is that it does not identify the underlying sources of any consistent individual differences. The second line of dispositional research has answered this criticism by examining specific characteristics that may produce these trait-like features.

Job satisfaction as a trait. In establishing the existence of a trait, two types of evidence are critically important: (a) stability over time and (b) consistency across different situations or contexts. Several studies indicate that job satisfaction exhibits both of these important dispositional properties. Schneider and Dachler (1978), for example, showed that various facets of job satisfaction were reasonably stable over a 16-month period (average retest correlations of .56 for managers and .58 for non-managers). Staw and Ross (1985) also found significant stability in job satisfaction over 3- and 5-year time intervals. Moreover, they demonstrated that employee satisfaction was consistent across contexts—that is, consistent attitudes were observed even when workers had changed employers and/or occupations (see also Blood, 1969; Staw, Bell, & Clausen, 1986).

Further support for the dispositional view was reported by Arvey and his associates, who demonstrated that job satisfaction has a substantial genetic component. Specifically, their analyses of monozygotic twins reared apart suggest that approximately 30% of the variance in general job satisfaction can be attributed to innate genetic factors (Arvey, Bouchard, Segal, & Abraham, 1989).

Job satisfaction in relation to general emotionality. Currently, the most promising candidates for explaining this stability and consistency in job satisfaction are general individual differences in emotionality. These affective dispositions predispose individuals not only to be satisfied with their jobs, but also to enjoy many other aspects of their lives as well. Schmitt and his associates (Schmitt & Bedeian, 1982; Schmitt & Pulakos, 1985), for example, have shown that general life satisfaction is a significant predictor of job satisfaction, even when major demographic and job design variables are controlled. Interestingly, Schmitt and Pulakos (1985) further demonstrated that job satisfaction predicted later life satisfaction in retirement. Taken together, these data suggest that there is a strong general factor, subsuming both work and nonwork domains, that predisposes individuals to be satisfied with various aspects of their lives.

Schmitt and his colleagues have noted, however, that their results do not help to identify the underlying personality or affective characteristics that predispose individuals to general life satisfaction or dissatisfaction. Staw *et al.* (1986) addressed this question by focusing on stable affective characteristics of the individual. Based on recent work suggesting that emotional temperament is a core component of personality (e.g., Watson & Clark, 1984), Staw *et al.* hypothesized that general individual differences in emotionality would predict job satisfaction. To test this notion, they constructed a 17-item Affective Disposition scale that was composed of both positive (e.g., "cheerful," "satisfied with self") and negative (e.g., "hostile," "irritable") mood items. This scale—assessed in adolescence—was a significant predictor of job satisfaction nearly 50 years later, even after controlling for objective differences in job conditions.

Similarly, subsequent studies have shown that a particular mood-centered disposition—Negative Affectivity (to be discussed shortly)—is significantly related to job stress and satisfaction, as well as to somatic complaints, depressive symptoms, and general life satisfaction (Brief, Burke, George, Robinson, & Webster, 1988; Levin & Stokes, 1989). Thus, accumulating evidence indicates that trait measures of emotionality are significantly related to employee satisfaction and that job satisfaction may be profitably viewed in the context of more general dispositions of affective temperament. (However, for recent critiques of the dispositional approach, see Davis-Blake & Pfeffer, 1989; Gerhart, 1987.)

The Current Study

The current study further examines the role of affective temperament in job satisfaction. We believe that it enhances the existing literature in two ways. First, whereas previous studies have related job satisfaction to only one mood disposition, we examine it in the context of a well-established, two-factor model of emotionality. Second, using a longitudinal design, we examine how these two trait factors relate to job satisfaction over time.

The two dimensions of emotionality. Most of the earlier studies in this area (Brief *et al.*, 1988; Levin & Stokes, 1989; Staw *et al.*, 1986) assessed only a single emotional trait. In contrast, our study was guided by extensive recent research in mood and personality, indicating that emotional experience is dominated by *two* broad factors, Negative Affect (NA) and Positive Affect (PA) (Watson, 1988b; Watson, Clark, & Tellegen, 1984, 1988; Watson & Tellegen, 1985). Both factors can be measured either as a state (i.e., short-term mood fluctuations) or as a trait (i.e., stable and consistent individual differences in general affective level). The traits (termed here trait NA and trait PA, respectively) represent predispositions to experience the corresponding state mood factor and will be the focus of this article.

Trait NA—which is strongly related to the traditional personality dimension of neuroticism—is extensively discussed by Watson and Clark (1984; see also Brief *et al.*, 1988; Levin & Stokes, 1989; Tellegen, 1985; Watson, Clark, & Carey, 1988; Watson & Pennebaker, 1989). High NA individuals are more likely to experience significant levels of distress and dissatisfaction at all times and in any given situation. High NA subjects are also more introspective and differentially dwell on their failures and shortcomings. They also tend to be negativistic and to focus on the negative side of others and the world in general. Consequently, they have a less favorable self-view and are less satisfied with their lives.

Trait PA—which is strongly related to measures of extraversion—reflects general levels of energy and enthusiasm. High trait PA individuals lead a full, fun, and interesting life and maintain a generally high activity level (Costa & McCrae, 1980; Tellegen, 1985; Watson, 1988a; Watson & Clark, *in press*). Tellegen (1985) further suggests that trait PA levels may reflect individual differences in sensitivity to pleasurable stimuli—that is, that high PA individuals are able to derive more pleasure and satisfaction from ongoing life experiences. Because of this, high PA subjects tend to engage in more active, pleasure-seeking behavior (e.g., greater social activity; see also Tellegen, 1988; Tellegen *et al.*, 1988; Watson 1988a).

Although employee satisfaction has been significantly related to trait NA in previous research (Brief *et al.*, 1988; Levin & Stokes, 1989), to

date, no relevant study has examined the corresponding association with trait PA. However, although she did not assess job satisfaction per se, George (1989) did report that trait PA was significantly related to positive mood levels at work. Moreover, Brief and Roberson (1989) found that current (i.e., state) PA levels were strongly correlated with several measures of job satisfaction. On the basis of these earlier findings, we predicted that both trait NA and trait PA would be significantly related to job satisfaction. Moreover, because they are only moderately correlated with one another (Tellegen, 1985; Watson, 1988b; Watson, Clark, & Carey, 1988; Watson & Pennebaker, 1989) we expected that trait NA and trait PA would make independent contributions to the prediction of employee satisfaction.

Emotionality and job satisfaction over time. As noted earlier, a basic tenet of any dispositional model is that responses should remain at least relatively stable over time. Because of this, trait measures of affect should be related to job satisfaction even when the two sets of measures are separated by a considerable time interval. In fact, as was discussed previously, Staw *et al.* (1986) demonstrated that a measure of general affective temperament significantly correlated with job satisfaction assessed nearly 50 years later.

To date, however, no research has examined the ability of either trait NA or trait PA to predict job satisfaction longitudinally. The current study therefore employed a prospective design in which trait NA and PA measures were assessed at two different times, approximately 2 years apart (mean interval = 27 months). Job satisfaction was also measured at the second assessment, enabling us to examine how trait NA and trait PA relate to satisfaction, both concurrently and as assessed after a considerable time interval. Because these dispositions are highly stable over time (e.g., Costa & McCrae, 1988; Watson & Clark, 1984), we expected that these trait measures would be significantly related to job satisfaction not only contemporaneously, but also prospectively.

It must be emphasized, however, that significant temperament-satisfaction correlations are not, by themselves, sufficient to establish a general affective component in job satisfaction. In this regard, Gerhart (1987) has rightly argued that observed personality-job satisfaction correlations may be confounded by objective differences in job quality (see also Davis-Blake & Pfeffer, 1989). To control for such differences, we assessed various indices of occupational quality in the study. In addition, we measured perceived changes in the work situation over the course of the study, as these have been shown to correlate with job satisfaction as well (Bhagat, McQuaid, Lindholm, & Segovis, 1985; Brief *et al.*, 1988; Spector, Dwyer, & Jex, 1988).

METHOD

Subjects

Subjects were full-time employees of Southern Methodist University (SMU) who participated in the university Wellness Program. The Wellness Program is a comprehensive health project designed to promote better physical fitness, dietary habits, stress management, and psychological well-being among SMU employees. Although participation in the Program is voluntary, external inducements offered by the University (e.g., extra vacation days) have encourage a broad range of employees to join. Thus, the current sample included secretaries, library staff, clerical workers, maintenance staff, health center personnel, academic advisors, accountants, office managers, administrators, and faculty.

The SMU Psychology Department began collecting personality and health data on Wellness participants in the fall of 1984. Various aspects of these data, as well as additional details regarding the subject sample, have been published elsewhere (Barr, Pennebaker, & Watson, 1988; Pennebaker & Watson, 1988; Watson & Pennebaker, 1989). We originally collected trait measures of emotionality (the Nem and Pem scales, to be described shortly) from 83 subjects in the fall of 1984. Temperament data were collected on 65 additional subjects in September, 1985, and 4 subjects in September, 1986. Thus, initial (Time 1) emotionality scores were available on a sample of 151 employees.

When we began collecting job satisfaction information in May, 1987, approximately 70% of these subjects were still employed by SMU. Thirty-four employees had voluntarily left the University and an additional 12 subjects had been fired. Of the 105 remaining SMU employees, we were able to collect job satisfaction questionnaires from 82 (78.1%), who constitute the final subject sample. Of these, 41 subjects were from the 1984 trait assessment, 37 from the 1985 assessment, and 4 from the 1986 assessment.

The final sample included 19 males and 63 females, with a mean age of 44.9 years (range = 20 to 67 years). All the employees had completed high school and 74.4% were college graduates. On the average, at the Time 2 assessment the subjects had been employed at SMU for 88.9 months (range = 18 to 300 months), and had been at their present job for 62.7 months (range = 3 to 288 months).

Measures

Affective temperament. Trait NA and PA were assessed using scales from the Multidimensional Personality Questionnaire (Tellegen, in press), a general inventory of normal-range personality with a true-false format.

For trait NA, we used the 14-item Negative Emotionality (Nem) Scale. High Nem scorers describe themselves as nervous, worrying, irritable, overly sensitive, and emotionally labile. Trait PA was assessed using the 11-item Positive Emotionality (Pem) scale. High scorers on this scale describe themselves as happy and enthusiastic, as having a great deal of energy, and as leading an interesting and exciting life. Both scales are internally consistent (coefficient alpha = .82 for Nem, .80 for Pem; $n = 872$) and stable over time (12-week retest $r = .72$ for Nem, .77 for Pem; $n = 109$) (see Watson & Pennebaker, 1989).

As was noted previously, these scales are strongly related to traditional measures of neuroticism and extraversion. For instance, in a sample of 235 undergraduates, Nem correlated .83 with the Eysenck Personality Questionnaire (EPQ) Neuroticism scale (Eysenck & Eysenck, 1975), whereas Pem correlated .60 with EPQ Extraversion (Watson & Mathews, 1989). Nem and Pem are also moderately correlated with one another, with an average coefficient of approximately $-.30$ (Watson & Pennebaker, 1989). In this regard, it should be noted that they are more highly related than are most measures of neuroticism and extraversion (e.g., Costa & McCrae, 1989; Eysenck & Eysenck, 1975)—and other measures of trait NA and trait PA (e.g., Watson, Clark, & Tellegen, 1988)—which typically correlate in the range $-.10$ to $-.20$. Nevertheless, Nem and Pem show good convergent and discriminant validity when related to mood ratings and other variables (e.g., Watson, 1988a; Watson, Clark, & Carey, 1988; Watson & Pennebaker, 1989).

Job satisfaction. Overall job satisfaction was measured using the 20-item short form of the Minnesota Satisfaction Questionnaire (MSQ; Weiss, Dawis, England, & Lofquist, 1967). Subjects rated how they felt about their present jobs on a 5-point scale (1 = *very dissatisfied*; 5 = *very satisfied*). Previous research has documented the internal consistency and stability of the MSQ (e.g., Brief *et al.*, 1988; Pulakos & Schmitt, 1983; Schmitt & Bedeian, 1982; Weiss *et al.*, 1967).

In addition, we administered the Job Descriptive Index (JDI; Smith, Kendall, & Hulin, 1969), one of the most widely used measures in organizational research (e.g., Blood, 1969; Schneider & Dachler, 1978; see also Locke, 1976). The JDI assesses five distinct aspects of satisfaction (Work, Pay, Promotion, Supervision, and Co-Workers). The Work, Supervision, and Co-Workers scales each consist of 18 items, whereas the Pay and Promotion scales each contain 9 items. Responses are scored 0 (item is not descriptive of job), 1 (cannot decide), or 3 (item is descriptive). Previous studies have shown that the five JDI scales are internally consistent, stable over time, and only weakly to moderately intercorrelated with one another (e.g., Schneider & Dachler, 1978; Smith *et al.*, 1969; see also Table 2).

Perceived job changes. To measure perceived changes in work situation over the course of the study, we had subjects complete a 17-item questionnaire that assessed job-related events during the past 3 years. The items were taken with slight modification from the Psychiatric Epidemiology Research Interview (Dohrenwend, Krasnoff, Askenasy, & Dohrenwend, 1978); sample events included "changed jobs," (25.6% of the subjects in fact changed jobs within SMU between Times 1 and 2), "promoted at work," and "took on a greatly increased work load." The subjects noted any such changes and then rated their impact on a 7-point scale ranging from -3 (*very negative*) to 0 (*no impact*) to +3 (*very positive*). This yielded two summary scores: Negative Changes (the sum of all negatively rated events) and Positive Changes (the sum of all positively rated events).

Occupational quality. As was discussed earlier, personality-job satisfaction correlations may be confounded by objective differences in job quality (Davis-Blake & Pfeffer, 1989; Gerhart, 1987). In order to examine the effect of such differences, four occupational variables were assessed. Three of these were factor-analytic scales created by Roos and Treiman (1980) from rating information in the fourth edition of the *Dictionary of Job Titles* (DOT: U.S. Department of Labor, 1977): Substantive Complexity (occupations scoring high on this factor require more complex handling of data, greater verbal and/or numerical aptitude, a higher education level, and involve more abstract and creative activities), Motor Skills (occupations scoring high on this dimension involve greater motor coordination, manual and finger dexterity, etc.), and Physical Demands (occupations scoring high on this factor require better eye-hand-foot coordination, more climbing, balancing, or stooping, etc.). Roos and Treiman's fourth factor, Undesirable Working Conditions, was dropped because it showed virtually no variability in our sample.

Two independent raters read brief job descriptions from each employee, placed him or her into the appropriate occupational category, and assigned the corresponding ratings for the three DOT factor scales. Interrater reliabilities were very high: .90 (Substantive Complexity), .95 (Motor Skills), and .83 (Physical Demands). The two ratings were thus averaged to yield a final score for each subject. Possible scores on each factor range between 0 and 10.

The final job quality variable was Duncan's Socioeconomic Index for Occupations (SES; see Reiss, 1961). Again, two raters independently placed each employee into the appropriate occupational category and assigned him or her the corresponding SES rating. Interrater agreement was again quite high ($r = .87$), and so the ratings were averaged to yield the final score. Possible SES scores range from 0 to 99.

Procedure

As noted earlier, Time 1 temperament data (the Nem and Pem scales) were collected during the fall of 1984, 1985, and 1986. Time 2 questionnaires (Nem and Pem, and the job satisfaction, job change, and occupational variables) were sent to the subjects through campus mail in May, 1987. Sixty-two subjects responded by August, 1987. The remaining subjects were individually contacted in January, 1988, yielding an additional 20 subjects. The average interval between the Time 1 and Time 2 questionnaires was 27 months (range = 9 to 39 months), with the vast majority of subjects (95.1%) having a time span of at least 21 months between their two assessments.

RESULTS

Attrition Analyses

Before proceeding with the main analyses, it is important to examine whether the final group of 82 subjects is a representative subsample of the original pool of 151 employees. To test this, we compared the Time 1 Nem and Pem scores of the 4 employee groups (respondents, nonrespondents, voluntarily quit, and fired) via one-way ANOVAs, corrected for unbalanced data. These analyses revealed no significant group differences on either Nem [$F(3,147) = 1.49$, ns] or Pem [$F(3,147) = 1.52$, ns], indicating that there was no bias due to differential attrition in these data: Initial Nem and Pem scores were unrelated to whether or not the subjects were still employed at SMU at Time 2 (a point we will return to later); and, for those employees still at the University, Time 1 scores did not predict response versus nonresponse to the Time 2 questionnaires.

Correlational Analyses

Relations among the predictor variables. Correlations among the emotionality, job change, occupational, and job satisfaction scales are presented in Table 2 (descriptive statistics for these variables are provided in Table 1). In examining the results we will initially consider the correlations among the various predictor scales. Several aspects of these data are noteworthy. First, Nem (retest $r = .63$) and Pem (retest $r = .74$) were both quite stable over the study period. These results are congruent with earlier research demonstrating the stability of affective temperament (e.g., Costa & McCrae, 1988; Watson & Clark, 1984).

The correlations between Nem and Pem (ranging from $-.33$ to $-.38$) are also broadly consistent with those reported in earlier studies (Watson, 1988a; Watson, Clark, & Carey, 1988; Watson & Pennebaker, 1989). As noted previously, these measures are more highly interrelated than are

TABLE 1
MEANS AND STANDARD DEVIATIONS FOR THE TEMPERAMENT, JOB EVENTS,
OCCUPATIONAL, AND JOB SATISFACTION SCALES

Scale	<i>n</i>	<i>M</i>	<i>SD</i>
Temperament			
Nem (Time 1)	82	5.76	3.84
Nem (Time 2)	82	4.32	3.13
Pem (Time 1)	82	8.07	2.66
Pem (Time 2)	82	8.01	2.80
Major job events			
Negative Job Changes	82	1.65	2.23
Positive Job Changes	82	3.77	3.87
Occupational			
Complexity	82	5.90	1.65
Motor Skills	82	4.56	2.09
Physical Demands	82	0.43	0.92
SES	82	60.90	13.14
Job satisfaction			
JDI Work	81	36.89	10.53
JDI Pay	82	10.91	5.98
JDI Promotion	81	8.05	7.01
JDI Supervision	81	41.32	11.40
JDI Co-Workers	80	40.11	11.27
MSQ	82	56.11	12.22

most neuroticism/extraversion and trait NA/trait PA scale pairs. In response to these and other findings, Clark and Watson (1990) have recently developed alternative measures of trait NA and trait PA that are similar in format to Nem and Pem, but that are less strongly intercorrelated. Nevertheless, these Nem-Pem correlations are low enough to suggest that trait NA and PA may contribute independently to the prediction of job satisfaction, an issue we will examine later.

The correlations between the temperament and job change variables show some unexpected results. Previous studies have found that stressful life events are consistently correlated with measures of trait NA, but are essentially unrelated to trait PA (Watson, 1988a; Watson, Pennebaker, & Folger, 1987; Watson & Pennebaker, 1989; see also Brief *et al.*, 1988). Table 2, however, indicates that negative job changes were significantly correlated with both Pem assessments, but were related to Nem only at Time 2. These discrepant findings are puzzling and clearly require replication before they can be interpreted.

Finally, the occupational variables were completely unrelated to affective temperament and major job changes. Thus, it is highly unlikely that occupational variables (at least as operationalized here) will confound any observed correlations between the other predictors and job satisfaction.

TABLE 2
CORRELATIONS AMONG PERSONALITY, JOB EVENTS, OCCUPATIONAL, AND JOB SATISFACTION VARIABLES

Type/scale	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Temperament																
1. Nem (Time 1)	(76)															
2. Nem (Time 2)	.63	(76)														
3. Pem (Time 1)	-.38	-.33	(73)													
4. Pem (Time 2)	-.35	-.36	.74	(82)												
Major job events																
5. Negative Changes	.13	.33	-.34	-.35	—											
6. Positive Changes	-.04	.01	.17	.10	-.05	—										
Occupational																
7. Complexity	-.01	-.04	.12	.12	-.07	-.06	(90)									
8. Motor Skills	.07	.11	-.16	-.12	.12	-.01	-.41	(95)								
9. Physical Demands	-.10	-.09	.01	-.01	-.09	-.14	-.03	.03	(83)							
10. SES	-.05	-.06	.21	.17	-.06	-.01	.81	-.40	-.17	(87)						
Job satisfaction																
11. JDI Work	-.32	-.38	.42	.36	-.37	.18	.42	-.28	-.07	.37	(83)					
12. JDI Pay	-.17	-.25	.16	.22	-.24	.16	.06	-.13	.14	.17	.25	(75)				
13. JDI Promotion	-.20	-.07	.26	.19	-.27	.31	.26	-.32	-.04	.30	.30	.39	(87)			
14. JDI Supervision	-.19	-.28	.17	.14	-.30	.14	.15	-.33	-.14	.23	.34	.17	.34	(88)		
15. JDI Co-Workers	-.30	-.23	.08	.20	-.13	.21	.16	-.21	-.34	.33	.32	.18	.31	.50	(89)	
16. MSQ	-.09	-.18	.29	.33	-.32	.18	.09	-.27	-.13	.18	.55	.27	.43	.60	.38	(91)

Note. Because of missing data, individual *ns* range from 79 to 82. Italic coefficients are significant at $p < .05$ (two-tailed test). Shown in parentheses are coefficient alphas (for the temperament and job satisfaction scales) or interrater reliabilities (for the occupational variables). Internal consistency is not assumed for the job change scales, so no reliability estimates are shown for these variables.

Nevertheless, in a later section we will directly examine this issue by entering the occupational variables first (and thus partialling out their influence) in hierarchical multiple regression analyses.

Relations among the job satisfaction scales. Consistent with previous research (e.g., Schneider & Dachler, 1978; Smith *et al.*, 1969), Table 2 indicates that the JDI scales generally have low to moderate correlations with one another. Most of these coefficients are statistically significant, but they are low enough to indicate that these facets of satisfaction should be considered separately. Not surprisingly, the MSQ—because it is a general measure of job satisfaction—is significantly correlated with all five JDI scales.

Relations between predictor variables and job satisfaction. Finally, Table 2 reports correlations between the various predictor variables and job satisfaction. There are several interesting aspects to these data. The most important finding is that, as predicted, Nem and Pem are each significantly correlated with some facets of job satisfaction. Moreover, these significant associations were generally maintained across the study period. In fact, Nem and Pem show very comparable relations with job satisfaction at both assessments. For example, Pem at Time 1 correlated significantly with scores on the JDI Work ($r = .42$) and Promotion ($r = .26$) scales that were assessed an average of over 2 years later; these coefficients are quite similar to the concurrent relations between these two scales and Pem at Time 2 ($r_s = .36$ and $.19$, respectively). Pem also showed comparable correlations with the MSQ at Times 1 ($r = .29$) and 2 ($r = .33$). Similarly, Nem correlated significantly with the JDI Work (for Time 1, $r = -.32$; for Time 2, $r = -.38$) and Co-Workers (for Time 1, $r = -.30$; for Time 2, $r = -.23$) scales at both assessments.¹

Another noteworthy finding is that the emotionality scales were significantly related to some aspects of job satisfaction, but not others. Both Nem and Pem were most strongly correlated with the JDI Work Scale, suggesting that general emotional temperament is most highly predictive of the extent to which employees enjoy their various work activities. These data are consistent with the suggestion that “intrinsic” aspects of job satisfaction (e.g., the extent to which work is perceived as challenging and achievement-related) have an especially strong dispositional compo-

¹ Because of the considerable range in the elapsed time interval across subjects (from 9 to 39 months), one may reasonably ask whether the correlations of job satisfaction with Time 1 Nem and Pem were affected by the length of the time span. To examine this issue, we computed partial correlations between the Time 1 temperament scales and job satisfaction, controlling for the length of the time interval. These partial correlations were all within $|.02|$ of the corresponding zero-order coefficients reported in Table 2, indicating that the elapsed time span was not a major factor influencing the magnitude of these relations.

nent (Arvey *et al.*, 1989). Similarly, the consistent correlation of Nem with the JDI Co-Workers scale—indicating that high trait NA employees are less satisfied with the interpersonal aspect of their work environment—replicates previous research showing that high trait NA subjects generally have more troubled and unpleasant interpersonal relationships (Stokes & McKirnan, 1989; Watson & Clark, 1984). Conversely, Nem and Pem were less strongly and consistently related to the JDI Pay, Supervision, and Promotion Scales, which is congruent with Arvey *et al.*'s (1989) contention that "extrinsic" aspects of job satisfaction (e.g., working conditions, supervision) may be less strongly related to dispositional factors. We should emphasize, however, that these facet-level findings are exploratory in nature and that they clearly need to be replicated in a larger sample.

It should be noted that the other predictors were also related to most aspects of job satisfaction. Negative job changes were significantly and moderately correlated with all of the job criteria, with the single exception of the JDI Co-Workers scale. Positive job events were also significantly related to the JDI Promotion scale. Finally, one or more of the occupational variables were significantly correlated with every job satisfaction scale except for JDI Pay.

Multivariate Prediction of Job Satisfaction

Hierarchical regressions of Nem and Pem. Table 2 indicates that all of the individual predictors are significantly related to at least some aspects of job satisfaction. However, it is also important to assess the independent and combined contributions of these variables to the overall prediction of satisfaction. To address these issues we performed two series of hierarchical multiple regressions. Because of the strong correlations between the Time 1 and Time 2 temperament scales (see Table 2), and because we are interested in the longitudinal prediction of job satisfaction, only the former were included in these analyses.

As was discussed earlier, previous studies have shown that trait NA is significantly related to employee satisfaction (Brief *et al.*, 1988; Levin & Stokes, 1989). However, these researchers did not simultaneously examine the potential contributions of trait PA. In outlining the rationale for our study, we argued that emotional experience is dominated by two general factors and that both should be assessed in studies of job satisfaction. The first series of analyses was designed to test this contention. Because previous studies have not examined trait PA, these analyses were specifically designed to assess whether it makes an additional, independent contribution to the prediction of job satisfaction after controlling for the effects of trait NA. Hierarchical multiple regressions were

therefore performed in which Nem at Time 1 was entered in Step 1, and Time 1 Pem was added in Step 2.

The results are shown in Table 3. Two aspects of these data are noteworthy. First, consistent with the simple correlational data (see Table 2), the combined predictive power of the temperament scales varied widely across the six criteria. Thus, Nem and Pem jointly predicted from 4.0% (JDI Pay) to 20.4% (JDI Work) of the variance in the job satisfaction scores. Second, Pem made a significant, independent contribution in two of the regressions. Specifically, it added substantially to the prediction of both JDI Work satisfaction (contributing an additional 10.3% of the variance) and the MSQ (an additional 8.0%). These results offer some support for our contention that both affective traits make unique contributions to the prediction of job satisfaction.

Hierarchical regressions using all types of predictors. The second series of regressions was designed to assess whether the temperament scales add significantly to the prediction of job satisfaction, even after controlling for the occupational and job events variables. In these analy-

TABLE 3
HIERARCHICAL MULTIPLE REGRESSION ANALYSES: PREDICTING JOB SATISFACTION FROM
THE TIME 1 TEMPERAMENT SCALES

Step	Predictors	Multiple <i>R</i>	<i>R</i> ² change
Criterion: JDI Work			
1	Nem 1	.32**	.101**
2	Pem 1	.45**	.103**
Criterion: JDI Pay			
1	Nem 1	.17	.029
2	Pem 1	.20	.011
Criterion: JDI Promotion			
1	Nem 1	.20	.038
2	Pem 1	.28*	.039
Criterion: JDI Supervision			
1	Nem 1	.19	.035
2	Pem 1	.22	.012
Criterion: JDI Co-Workers			
1	Nem 1	.30**	.090**
2	Pem 1	.30*	.002
Criterion: MSQ			
1	Nem 1	.09	.008
2	Pem 1	.30*	.080*

* $p < .05$.

** $p < .01$.

ses, the occupational variables were entered in the initial block, followed by the job change scores in Step 2, and the Time 1 temperament scales in Step 3.

The results are presented in Table 4. Overall, the combined predictors were significantly related to all of the criteria except JDI Pay; together, they accounted for 17.9 to 43.9% of the variance in the six job satisfaction scores. For our purposes, however, the most important finding is that the emotionality scales made a significant, independent contribution to satisfaction with both Work (accounting for an additional 9.5% of the variance) and Co-Workers (an additional 11.4%).

Nevertheless, it must be emphasized that the other types of predictors were also substantially related to most of the job satisfaction criteria.

TABLE 4
HIERARCHICAL MULTIPLE REGRESSION ANALYSES: PREDICTING JOB SATISFACTION FROM
THE OCCUPATIONAL, JOB EVENTS, AND TEMPERAMENT VARIABLES

Step	Predictors	Multiple <i>R</i>	<i>R</i> ² change
Criterion: JDI Work			
1	Occupational variables	.44**	.190**
2	Job events	.58**	.144**
3	Temperament (Time 1)	.66**	.095**
Criterion: JDI Pay			
1	Occupational variables	.31	.096
2	Job events	.41*	.072*
3	Temperament (Time 1)	.42	.011
Criterion: JDI Promotion			
1	Occupational variables	.37*	.140*
2	Job events	.54**	.148**
3	Temperament (Time 1)	.55**	.017
Criterion: JDI Supervision			
1	Occupational variables	.37*	.138*
2	Job events	.47**	.085*
3	Temperament (Time 1)	.49**	.022
Criterion: JDI Co-Workers			
1	Occupational variables	.47**	.219**
2	Job events	.51**	.043
3	Temperament (Time 1)	.61**	.114**
Criterion: MSQ			
1	Occupational variables	.32	.103
2	Job events	.46**	.113**
3	Temperament (Time 1)	.48*	.016

* $p < .05$.

** $p < .01$.

Thus, these data again demonstrate that both trait and environmental variables are important in producing employee satisfaction (see also Locke, 1976; Staw & Ross, 1985).

DISCUSSION

Summary of the Basic Findings

The results of this study were consistent with our predictions and are largely congruent with findings from earlier studies. They permit several general conclusions. First, our data confirm that trait measures of emotionality are moderately related to some aspects of job satisfaction. Second, these relations are maintained over time, so that affective temperament is significantly related to certain facets of employee satisfaction assessed (on the average) over 2 years later. Third, both trait NA and trait PA contribute significantly to the prediction of some job satisfaction criteria. At the same time, however, Tables 2 through 4 also indicated that although some aspects of job satisfaction were significantly related to affective temperament (e.g., satisfaction with Work and Co-Workers), others were not (e.g., satisfaction with Pay and Supervision).

Finally, although the focus of this article has been on trait variables, Tables 2 and 4 demonstrated that other factors (i.e., the occupational and job change scores) also play a significant role in employee satisfaction. Thus, the best prediction is achieved when both dispositional and environmental variables are assessed.

Limitations of the Study

Generalizability to other samples. Our employee sample was relatively small, and it is important that our results be replicated in a larger subject group. Note, however, that several of our findings have also been reported by previous investigators. Thus, we expect that these results will further replicate in other samples.

Other findings (e.g., specific relations between Nem and Pem and the individual JDI scales) are unique to this study, however, and clearly require replication, not only in larger samples, but with different types of employee groups as well. To some extent, the correlates of the various facets of satisfaction—pay, supervision, work activities, and so on—must inevitably depend upon the particular occupations and organizations that are assessed in a given study. Because of such sample-specific characteristics, trait PA and trait NA may show somewhat different correlational patterns in other types of employee samples, but this is a question for future research.

Generalizability to other job measures. It is also important to explore how trait NA and PA relate to a wider range of job satisfaction and perfor-

mance variables. For example, Staw and Ross (1985) point out that although job dissatisfaction may predict other organizational outcomes (e.g., absenteeism and turnover), it is unclear whether dispositional measures are also related to these variables. That is, outcomes such as absenteeism and turnover may reflect transient sources of dissatisfaction rather than stable individual differences in emotionality. In support of this contention, George (1989) found that recent positive mood at work was a significant predictor of absenteeism, but that trait NA and trait PA were not. Similarly, in the current data, initial Nem and Pem scores were unrelated to employee attrition, suggesting that affective temperament is not an important predictor of employee turnover. This issue certainly warrants further research.

Larger, more extensive analyses would also permit a fuller examination of the differential correlates of trait NA and PA. Previous studies have generally found that these trait factors correlate with different types of variables: NA (but not PA) is broadly related to psychopathology, health complaints, and perceived stress, whereas PA is more strongly associated with social and physical activity (e.g., Beiser, 1974; Bradburn, 1969; Watson, 1988a; Watson, Clark, & Carey, 1988; Watson & Pennebaker, 1989). We saw some evidence of such differential correlates here—for instance, trait NA (but not trait PA) was significantly related to satisfaction with co-workers—but we were not able to explore this issue in detail in the current sample. This is also an interesting area for future research.

Objective differences in job quality. Previous researchers have rightly argued that actual differences in job quality must be controlled before the impact of traits on job satisfaction can truly be assessed (Davis-Blake & Pfeffer, 1989; Gerhart, 1987). Our data (see Table 4)—and those of previous investigators as well (Levin & Stokes, 1989; Schmitt & Pulakos, 1985; Staw *et al.*, 1986)—demonstrate that affective temperament remains a significant predictor of employee satisfaction even after overall differences in type of occupation are partialled out. However, these broad occupational variables do not tap the substantial differences in job characteristics that are found *within* each occupational category, that is, at the level of individual jobs. If the importance of trait variables is to be established conclusively, future studies should control for individual job characteristics (for a discussion, see Davis-Blake & Pfeffer, 1989; Gerhart, 1987).

It is especially important that future studies assess *objective* differences in job characteristics, because *perceived* job characteristics may be inherently confounded with job satisfaction, the very criterion they are purporting to predict (e.g., Aldag, Barr, & Brief, 1981; Roberts & Glick, 1981; Staw & Ross, 1985). Furthermore, previous research has shown that trait NA is related to a pervasive negativistic style; that is, high NA

subjects are more likely to respond negatively to almost any kind of questionnaire item and to complain about various aspects of themselves, their lives, and their environment (e.g., Brief *et al.*, 1988; Watson & Clark, 1984; Watson & Pennebaker, 1989; Watson *et al.*, 1987). Thus, perceived differences in job quality may substantially reflect individual differences in trait NA. Partialling out these perceptions may, therefore, spuriously eliminate valid, trait-related variance.

The preceding discussion may suggest to some readers that trait NA (and perhaps trait PA as well) simply reflects a response style (for a recent discussion of response styles, see Feldman & Lynch, 1988). We should emphasize that this is not the case. As mentioned earlier, extensive evidence indicates that trait NA and trait PA have important external correlates in areas such as psychopathology and social behavior (see Tellegen, 1985; Watson & Clark, 1984, *in press*; Watson, Clark, & Carey, 1988). Furthermore, previous research has shown that self-report emotionality scales are significantly correlated with corresponding peer- and clinician-ratings (McCrae, 1982; McCrae & Costa, 1987; Watson & Clark, 1984, 1991), and that they are not strongly influenced by socially desirable responding, impression management, or conscious faking (e.g., McCrae & Costa, 1983; Paulhus, 1984).

Why are job satisfaction and temperament related? A final limitation of this study is that it does not address the issue of *why* affective temperament and job satisfaction are related. Previous research has indicated that these dispositional factors reflect, in part, biologically based and genetically transmitted differences in general affective level (Tellegen, 1985; Tellegen *et al.*, 1988; see also Arvey *et al.*, 1989). Because of this, most dispositionally oriented investigators have tacitly assumed that general temperament is the causally primary variable. More specifically, researchers have assumed that people who have a generally good temperament (i.e., high PA, low NA) will be predisposed to enjoy certain aspects of their jobs as well. According to this view, affective dispositions broadly influence the extent to which individuals are satisfied with—and derive pleasure from—various aspects of their lives, including their jobs. This view is consistent with our results, which suggest that temperament primarily influences intrinsic aspects of job satisfaction (e.g., the enjoyment of work-related activities).

It is also possible, however, that causality runs in the opposite direction: That is, job satisfaction is an important life domain that may influence one's broader adjustment and emotional well-being, so that higher job satisfaction may lead to more general life satisfaction and better emotional adjustment (i.e., higher trait PA and lower trait NA). This model is likely true to some extent, but seems inadequate as a general explanation for our results. The view that trait measures of emotionality are simple

by-products of job satisfaction is inconsistent with the accumulating body of research on affective temperament, which has demonstrated that trait NA and trait PA are highly stable traits with a substantial genetic component (Costa & McCrae, 1988; Tellegen *et al.*, 1988; Watson & Clark, 1984). As was noted previously, these dispositions have also been found to have significant correlates in several other domains, such as psychopathology, stress, health, and social behavior (Tellegen, 1985; Watson & Clark, 1984, in press; Watson, Clark, & Carey, 1988; Watson & Pennebaker, 1989).

We lean toward a bidirectional model in which job satisfaction and general temperament mutually influence one another (see also Schmitt & Bedeian, 1982). In other words, affective temperament influences certain aspects of job satisfaction, but is itself a product of job satisfaction to some extent. This is, to us, the most promising possibility, and is a crucial area for future research.

CONCLUSION

Despite the limitations of this study, and the unresolved issues we have noted, our data converge well with those of earlier investigators. Although future research must specify the precise mechanisms underlying these relations, considerable data now indicate that some aspects of job satisfaction are moderately related to general factors of emotionality. Thus, as was first noted by Schmitt and Pulakos (1985), job satisfaction can be viewed in the context of the broader emotional lives of employees. Job satisfaction is not simply a function of various organizational characteristics, but also reflects more broadly the ongoing lives of individuals. In turn, job satisfaction likely impacts other life domains as well. The data therefore suggest that job satisfaction can be placed into the larger context of general emotionality and that it should not be studied in isolation from other aspects of employees' emotional lives.

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